



Surfactant-aided removal of organics

Description of Technology: The present invention relates to a procedure for using an aqueous surfactant system to remove alkyllead compounds and solvents associated with motor fuel antiknock compound (hereinafter referred to as "MFAC"), such as 1,2-dichloroethane and 1,2-dibromoethane, from equipment, sludges, soils, among others.

Patent Listing:

1. **US Patent No.** 6,030,467, Issued on February 29, 2000, "Surfactant-aided removal of organics"
<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetacgi%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&co1=AND&d=PTXT&s1=6,030,467.PN.&OS=PN/6,030,467&RS=PN/6,030,467>

Market Potential: MFACs were widely used; but are now being phased out because of concerns over contamination of the environment with lead compounds, and incompatibility of MFAC-treated fuels with catalytic devices used to minimize motor exhaust emissions of hydrocarbons, carbon monoxide, and oxides of nitrogen. Manufacturing and distribution equipment worldwide is frequently contaminated with components of MFACs. Contaminated sludges typically also exist in this equipment. In many cases soils at MFAC and petroleum refinery manufacturing and storage sites, as well as commercial gasoline storage areas, have been contaminated with these same MFAC components. These components of MFAC are toxic and, thus, treatment of contaminated equipment, sludges, and soils is usually required prior to their disposal or reclamation.

MFAC can be transported to refineries by rail tank cars, tank trucks, and by ship worldwide. Spills may occur at the various terminals and storage facilities thereby creating MFAC-contaminated soil. MFAC can be unloaded into weigh tanks at the refinery. MFAC can be metered from these tanks into the gasoline to make "leaded" gasoline. Corrosion of the interior tank surfaces normally forms an iron oxide deposit or scale, e.g., lead and iron salts, within the tank.

TEL contaminated sludge (and soil contaminated with TEL) arises at the alkyllead manufacturing facility. The wash water waste stream from the TEL manufacturing process contains fine particulate lead. This water stream is typically fed to a settling basin to allow the solids to settle prior to the water being discharged. Due to the insolubility of TEL in water (0.8 ppm), it is found adhered to this sludge deposited in the settling ponds.

Benefits:

- Treats toxic byproducts of MFACs

Applications:

- Contaminated soil or sludge

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